

*Issued by:***Cereal Disease Laboratory**

U.S. Department of Agriculture  
Agricultural Research Service  
1551 Lindig St, University of Minnesota  
St. Paul, MN 55108-6052  
(612) 625-6299 FAX (651) 649-5054  
[Mark.Hughes@ars.usda.gov](mailto:Mark.Hughes@ars.usda.gov)

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<http://www.ars.usda.gov/Main/docs.htm?docid=9970>

Or, send an email to: [Mark.Hughes@ars.usda.gov](mailto:Mark.Hughes@ars.usda.gov)

Reports from this list as well as all Cereal Rust Bulletins are maintained on the CDL website (<http://www.ars.usda.gov/mwa/cdl/>)

- Wheat leaf rust is spreading rapidly in South Texas.
- Low levels of stripe rust were found in Oklahoma and Kansas.
- Pycnia and aecia are present on buckthorn leaves in plots in southeastern Minnesota.
- Barley leaf rust is present in Delaware and in plots in southwestern and eastern Virginia.
- *Request for cereal rust observations and samples in 2012*

For original, detailed reports from our cooperators and CDL staff, please visit the [Cereal Rust Situation](#) (CRS) reports page on the [CDL website](#) or click the [CRS](#) link found throughout the bulletin.

Most of the winter wheat crop east of the Rockies is two to three weeks ahead of normal crop development. Nationally, spring wheat, oat and barley planting is well ahead of normal. Fifty eight percent of the U.S. winter wheat crop was reported in good to excellent condition on April 1. Since the fall, crop conditions in the southern Great Plain have improved due to increased precipitation.

**Wheat stem rust.** Not yet reported this year in the U.S.

**Wheat leaf rust.**

**Texas** – Wheat leaf rust was spreading rapidly in South Texas in late March. In plots at College Station, the cultivars TAM 110, TAM 112 (*Lr39/41*), Jagger (*Lr17*) and Jagalene (*Lr24*) were rated at 100S for leaf rust severity and response; at Castroville Jagger and Jagalene were rated at nearly 100S while TAM 112 was at 20S and TAM 111 at a trace. Leaf rust was developing in plots at McGregor as well. At Commerce in northeastern Texas, the only leaf rust found was in plots on lower leaves of the cultivar Jackpot (*Lr39/41*), however, further development was expected.

**Oklahoma** – Leaf rust was found at very low incidence in southwestern to central Oklahoma in early April (see [CRS](#)).

**Kansas** – Low levels of leaf rust were found on the cultivar 2137 in plots near Manhattan in northeastern Kansas on March 29. The rust was found in mid-canopy and the wheat was at flag leaf emergence stage. In early April low levels of leaf rust were reported in south central and central areas of the state. The wheat ranged from flag leaf emergence to heading, which is approximately 2-3 weeks ahead of normal crop development.

**Nebraska** – Rust has not been yet reported in the state and was not found in an April 5 survey of the southern tier of counties in the state. Wheat ranged from jointing to flag leaf emergence in the surveyed area.

**Louisiana** – There have been no new reports of leaf rust from the state since severe leaf rust was reported in plots at the Ben Hur Farm in Baton Rouge in southeastern in early March.



**Mississippi** – Leaf rust had been found throughout much of the state by early April (see [CRS](#)). Fungicides were applied to fields with susceptible cultivars. Wheat in the state is likely three weeks ahead of normal development.

**Arkansas** – Traces of wheat leaf rust were found scattered about in a few areas of the state by late March.

**Georgia** – Sporadic, but heavy leaf rust infections were reported in Seminole County in extreme southwestern Georgia in early April. Low levels of leaf rust were previously found in east central Georgia in mid-March.

**North Carolina** – Low levels of leaf rust were found in plots at Plymouth in eastern North Carolina on March 23.

**Wheat leaf rust map.** Please visit: (<http://www.ars.usda.gov/Main/docs.htm?docid=9757>).

**Wheat cultivar *Lr* gene postulation database.** Please visit: [Leaf rust resistance gene postulation in current U.S. wheat cultivars](#).

### **Wheat stripe rust.**

**Texas** – Stripe rust continued to develop and spread in plots at McGregor in late March. The rust had moved to the upper canopies of two cultivars (TAM 111 and Garrison) that were resistant in 2010. The stripe rust found in the nursery does not appear to have Yr17 virulence. At Commerce in northeastern Texas in late March, stripe rust was widespread on the susceptible cultivar Patton, but at low levels on most cultivars in the plots.

**Oklahoma** – Stripe rust was reported across southwestern, central and west central Oklahoma, but less frequently reported across north central and northwestern Oklahoma in late March. The rust was widely scattered throughout southwestern Oklahoma in early April, however, at no spot surveyed was it heavy or widespread. The recent hot temperatures two weeks ago had stopped stripe rust development, but with the cool wet weather last week pustules were once again sporulating.

**Kansas** – Stripe rust was found at trace levels in plots at Manhattan in northeastern Kansas on March 29. Low levels of stripe rust were reported in south central and central Kansas by early April. The wheat in these areas ranges from flag leaf emergence to heading, which is approximately 2-3 weeks ahead of normal crop development.

**Louisiana** – A few reports of stripe rust were noted in commercial fields in early March, but it does not appear it will be a major disease in the state in 2012 (see [CRS](#)).

**Mississippi** – Stripe rust had been found in 18 counties in the state by early April (see stripe rust map, CRS). Fungicides have been applied to most fields containing susceptible cultivars and some fields have had a second fungicide application. Wheat in the state is likely three weeks ahead of normal development.

**Arkansas** – Stripe rust development has slowed across the state the last couple of weeks due to warm, dry weather coupled with adult plant resistance and fungicide applications. Conditions over the next week or so will likely be favorable for stripe rust development. Stripe rust was first found on January 20 and was confirmed in 17 counties by March 8 (see [CRB #1](#) and [CRS](#)).

**Tennessee** – Stripe was found and increasing in several fields in western Tennessee by late March (see CRS). The wheat ranged from boot to heading stage.

**Kentucky** – Traces of stripe rust were found in the state in late April, but warm temperatures appeared to be keeping development in check.

**Georgia** – No stripe rust had been reported in commercial fields in the state as of April 2.



**Idaho** – Winter wheat broke dormancy in southern and southeastern Idaho in late March. The wheat (Feekes 3) was greening rapidly. No overwintering stripe rust was found in plots at Aberdeen in southeastern Idaho.

**Washington** – No stripe rust has been found in commercial fields surveyed in southeastern Washington, but a few infected leaves were found in experimental fields in Garfield County in early April (see [CRS](#)). The rust was found in the lower canopy (Feekes 6) indicating the rust overwintered. Stripe rust disease pressure is much lower in eastern Washington and likely the eastern Pacific Northwest than in 2011. Stripe rust had developed to 100% prevalence and 60% severity in plots (Feekes 7) at Mount Vernon in northwestern Washington – this is normal for this area.

Please send wheat and barley stripe rust collections as soon as possible after collection to:

Dr. Xianming Chen  
USDA-ARS  
361 Johnson Hall  
P.O. Box 646430  
Washington State University  
Pullman, WA 99164-6430  
email: [xianming@wsu.edu](mailto:xianming@wsu.edu)

**Note:** Stripe rust collections are vulnerable to heat and do not survive long at warm temperatures; therefore, if shipment of collections for race identification is delayed their viability will be greatly reduced. An overnight courier service is preferred for sending stripe rust collections.

**Wheat stripe rust map.** Please visit: (<http://www.ars.usda.gov/Main/docs.htm?docid=9757>).

**Oat stem rust.** There have been no new reports of oat stem rust since it was reported in extreme southern Texas and College Station Texas in late March.

**Oat crown rust.** There have been no new reports of oat crown rust since it was reported in southeastern Louisiana (early March) and South Texas (late March).

Small leaves were noted on many of the buckthorn bushes (alternate host for oat crown rust) in the Matt Moore Buckthorn Plots at St. Paul, Minnesota on April 9. Small pycnia and aecia were even found on some of the leaves. This is more than a month ahead of the average for pycnia and aecia appearance in recent years.

**Barley stem rust.** Not yet reported in the U.S. this year.

**Barley leaf rust.** Barley leaf rust was found at low severity and prevalence in Sussex County, Delaware in late March. The rust was found in the lower and mid canopy, the barley was at Feekes stage 9. Barley leaf rust was widespread in plots in Warsaw in eastern Virginia and was found in plots in Blacksburg in southwest Virginia in early April. Previously heavy barley leaf rust was found on lower leaves in plots Mount Holly in eastern Virginia and was severe in windbreaks in extreme southern Texas in late March (see [CRB #1](#) and [CRS](#)).

**Barley stripe rust.** Not yet reported this year in the U.S.

**Rye stem rust.** Not yet reported this year in the U.S.

**Rye leaf rust.** Not yet reported this year in the U.S.



Cereal Disease Laboratory ([www.ars.usda.gov/mwa/cdl](http://www.ars.usda.gov/mwa/cdl))

## Request for cereal rust observations and samples in 2012

### Cooperators' assistance is critical to our work

We depend on the assistance of our cooperators for cereal rust observations and samples (as well as other significant small grain disease observations). Without this assistance our job would be much more difficult. We thank all those who have assisted us in the past and hope you will continue to do so into the future!

### Observations

If you have information on the cereal rust situation in your area that you would be willing to share, please email your observations to:

Mark Hughes ([Mark.Hughes@ars.usda.gov](mailto:Mark.Hughes@ars.usda.gov))

Or, to: [CEREAL-RUST-SURVEY@LISTS.UMN.EDU](mailto:CEREAL-RUST-SURVEY@LISTS.UMN.EDU) \*

*We would like to include your name and email address so others can contact you. If, however, you prefer not having your name or email address appear with the information, please let us know when submitting your observations.*

### Information of most importance

We welcome any information you can provide, but are particularly interested in:

- Location (state, county, city)
- Rust (leaf rust, stem rust, stripe rust, crown rust)
- Host (wheat, barley, oat, grasses, etc.)
- Cultivar or line name if known
- Grain class if known
- Severity and prevalence
- Growth stage -when the rust likely arrived, when infection was first noted and current growth stage
- Where rust is found on the plants, e.g., lower leaves, flag leaf, etc.

### Guidelines for making cereal rust uredinial collections\*\*

Reports on the distribution of races of cereal rust fungi are an important part of our annual cereal rust surveys. We routinely collect and test isolates of stem rust (wheat, oat, and barley), wheat leaf rust, oat crown rust and barley leaf rust. We are most interested in small grain collections (wheat, barley, oat and rye), but are also interested in stem rust, leaf rust, and stripe rust collections from grasses, e.g.:

Jointed goatgrass (*Aegilops cylindrica*)

Ryegrasses (*Elymus* spp.)

Wheatgrasses (*Elytrigia* spp.)

Wild barleys (*Hordeum* spp.)

Wild oat (*Avena fatua*)

Common grasses, e.g., *Agropyron*, *Agrostis*, *Festuca*, *Leymus*, *Lolium*, *Phleum*, and *Psathyrostachys* spp.

*Images and descriptions for the above grass species can be found on the USDA Natural Resources Conservation Service's [PLANTS Database](#) website*

1. Rust pustules should be fresh and fully developed, except when this may not be possible for the first uredinial collections found early in the season.
2. When rusted small grain or grass plants are encountered, please cut 5 to 10 sections of plant stem (if possible, avoid including plant nodes as they do not readily air dry) or leaf, 4 inches long with large and small pustules and place in a regular paper mail envelope (**Please Do Not use plastic or waterproof envelopes**). Do not staple or tape the envelope, instead fold the flap shut.



Cereal Disease Laboratory ([www.ars.usda.gov/mwa/cdl](http://www.ars.usda.gov/mwa/cdl))

3. Important information should be recorded for each collection, e.g., date, county, state, cultivar or line, crop stage, whether collection is from a nursery or commercial field, etc. Please use our data collection form ([standard pdf](#) or [fillable pdf](#)) if possible. If the grass genus or species is unknown to the collector, a head may be included in a separate bag or envelope, indicating which collection it is associated with, to aid in identification.
4. Please avoid exposing samples to direct sunlight or unusual heat of any kind, e.g. car dashboard, outside mailboxes, etc. Samples should be kept at room temperature for 24 hours to allow the plant material to dry. Afterwards the samples should be placed in a cooler or refrigerator before they are mailed. Please do not keep samples in a freezer. The samples should be sent to us as soon as possible after the samples have dried.
5. Please promptly mail the envelope(s) with the appropriate collection form inside each envelope to:

Cereal Disease Laboratory, USDA-ARS  
1551 Lindig Street  
University of Minnesota  
St. Paul, Minnesota 55108

**\*\* Stripe rust collections should be sent to:**

Dr. Xianming Chen  
USDA-ARS  
361 Johnson Hall  
Washington State University  
Pullman, WA 99164-6430

**Thank you in advance for your assistance!**

#### **Current cereal rust situation reports**

For the latest cereal rust situation reports, please subscribe to the cereal rust survey listserv list\*. Instructions can be found at:

<http://www.lsoft.com/scripts/wl.exe?SL1=CEREAL-RUST-SURVEY&H=LISTS.UMN.EDU>

Or, if you prefer, simply send a subscription request to Mark Hughes ([Mark.Hughes@ars.usda.gov](mailto:Mark.Hughes@ars.usda.gov)).

All messages sent to the list are archived at: <http://www.ars.usda.gov/Main/docs.htm?docid=9757>

#### **Identifying rust diseases of wheat and barley**

A [guide](#) developed by the multi-state extension and research committees for small grain diseases, NCERA-184 & WERA-97, is available at:

[http://www.ars.usda.gov/SP2UserFiles/ad\\_hoc/36400500Publications/Rust\\_Diseases\\_National.pdf](http://www.ars.usda.gov/SP2UserFiles/ad_hoc/36400500Publications/Rust_Diseases_National.pdf)

\*The sole purpose of the Cereal Rust Survey listserv list is to provide a format for cereal researchers and extension personnel to share observations of cereal rusts and other cereal diseases. We make no warranty about any information shared on this listserv or its utility or applicability. Mention of any product, brand, or trademark does not imply endorsement or recommendation of that product, brand, or trademark by USDA-ARS, or any of the participants on this listserv. By enrolling on this listserv list, participants understand and agree to abide by these conditions.



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